

Clarks Telecommunications Company
Ability to Remain Functional in Emergency Situations

1. Clarks Telecommunications Company has been providing high quality service in Nebraska since 1958. This includes operating in adverse conditions including blizzards, ice storms, thunderstorms, tornadoes and during prolonged power outages. Clarks Telecommunications Company's management team, plant supervisors, plant technicians and customer service representatives have the training, experience and equipment necessary to respond to, manage and operate in emergency situations.
2. Clarks Telecommunications Company follows applicable Rural Utilities Service (RUS) Telecommunications program practices and guidelines including the Telecommunications Engineering and Construction Manual (TE&CM) and other industry standards available to small telecommunications carriers. Clarks Telecommunications Company also meets the requirements of the Nebraska Public Service Commission (NPSC) as applied to local exchange service.

3. Back-Up Power

3.1. Central Office

- 3.1.1. Clarks Telecommunications Company maintains storage batteries in each central office designed to provide a minimum reserve capacity consistent with RUS TE&CM 1751E-302, Power Requirements for Digital Central Office Equipment. 1751E-302 paragraph 2.3.4 recommends a minimum reserve capacity of 8 hours, or 3 hours if the central office is equipped with an emergency standby generator. This is consistent with Title 291, NPSC Telecommunications Rules and Regulations, Chapter 5, paragraph 002.05 Emergency Operations and Power.
- 3.1.2. Clarks Telecommunications Company maintains a dedicated standby generator fueled with natural gas, propane or diesel fuel at each central office location. The standby unit is equipped with an automatic transfer switch so that in the event of an interruption of the commercial electric power lasting more than a few minutes, the standby generator starts automatically and provides electrical power to the central office equipment, air conditioning and building lighting. The automatic transfer switch also exercises the standby unit periodically and an alarm indication is sent if the standby generator does not start so that telecommunications personnel can perform proactive maintenance.

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3.2. Remote Equipment Cabinets

3.2.1. Where electronic equipment in cabinets located remotely from the central office, is used to provide service, the cabinets are equipped with batteries designed to operate for a minimum of eight hours without commercial electrical power. In addition, Clarks Telecommunications Company maintains portable AC standby generators for use in the event of prolonged commercial power interruptions and the cabinets are equipped with external receptacles to facilitate connection to portable generators.

3.3. Optical Network Terminations (ONT's)

3.3.1. Where Fiber-to-the-Premises (FTTP) technology has been deployed the ONT's are powered by micro-uninterruptable power supplies (UPS) located on the customer premises and powered from the customer's commercial electrical power. The UPS batteries are specified for a minimum of eight hours of reserve capacity. The FTTP electronics system monitors the ONT's and notifies Clarks Telecommunications Company's maintenance personnel when any ONT's batteries are no longer capable of holding the charge required for the designed battery reserve capacity so that Clarks Telecommunications Company can work with the customer to replace the UPS batteries. Clarks Telecommunications Company also maintains a cache of UPS's for routine and emergency replacement.

4. Rerouting Traffic around Damaged Facilities

4.1. In the event of damage to cable facilities owned by Clarks Telecommunications Company, our maintenance personnel would restore service using emergency splice kits kept on hand for these types of service disruptions. If the damaged facilities are not owned by Clarks Telecommunications Company we would work with the carrier directly affected to identify the source of disruption and the estimated amount of time before service is restored.

4.2. For those Clarks Telecommunications Company central office locations which have diverse cable routes or are part of a fiber optic ring, critical circuits such as 911 trunks and SS7 A-links are assigned to diverse routes to the extent that this can be coordinated with the connecting carrier(s). Every effort is made to assign

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critical circuits over diverse facilities where available so that a single outage does not isolate customers from critical services.

- 4.3. In the event of an extended outage, contact would be made with another service provider which has a separate, physical cable connection with Clarks Telecommunications Company to provision temporary alternate routes supporting originating and terminating toll calls. Emphasis would first be placed on establishing connections to nearby PSAP, law-enforcement and emergency services.

5. Managing Traffic Spikes

- 5.1. Clarks Telecommunications Company meets Title 291, NPSC Telecommunications Rules and Regulations, Chapter 5, paragraph 002.12 Dial Service Objectives for sufficient central office capacity and equipment during the "...average busy hour-busy season..."
- 5.2. Clarks Telecommunications Company follows applicable RUS practices 522 and 322 when specifying, administering, and assigning facilities within its control (as opposed to facilities ordered by connecting interexchange carriers).
- 5.3. Clarks Telecommunications Company uses a Metaswitch soft switch platform. A geo-diverse switching architecture is used whereby redundant Media Gateway Controllers are located in separate physical locations. If a Media Gateway Controller goes out of service at one location, the other Media Gateway Controller continues to support all subtending trunks and access lines at all locations served by the Media Gateway Controller(s).
- 5.4. The Metaswitch will provide performance up to 250,000 Busy Hour Call Attempts (BHCA) of which we are currently operating at 11,741 BHCA. The backplane is non-blocking and will allow 24 DS-0's of traffic to be passed per DS-1 port. When traffic volumes greatly exceed specified criteria and additional capacity of the switch or connecting facilities, the Metaswitch continues to process calls but with potentially longer waiting times for dial tone, higher post-dialing delays and a higher probability of callers receiving all trunks busy indications (fast busy) and having to redial calls. Depending on the magnitude and duration of extreme peak demand, Clarks Telecommunications Company would examine alternatives such as provisioning additional facilities and work with connecting carriers to expedite additional capacity.